MARINE SAFETY INVESTIGATION REPORT

Safety investigation into the collision involving the Maltese registered general cargo

SIDER CAPRI

and the Italian registered ro-ro vessel

GRANDE ANVERSA

In the Çanakkale Strait’s Traffic Separation Scheme

on 27 November 2016

201611/042

MARINE SAFETY INVESTIGATION REPORT NO. 25/2017

FINAL

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Crew members MV Grande Anversa
Crew members MV Sider Capri
Direzione Generale per le Investigazioni Ferroviarie e Marittime
ISM Managers MV Grande Anversa
ISM Managers MV Sider Capri
Turkish Straits Vessel Traffic Service
VDR Grande Anversa
# Glossary of Terms and Abbreviations

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>°C</td>
<td>Degrees Celsius</td>
</tr>
<tr>
<td>AB</td>
<td>Able seaman</td>
</tr>
<tr>
<td>AIS</td>
<td>Automatic Identification System</td>
</tr>
<tr>
<td>ARPA</td>
<td>Automatic Radar Plotting Aid</td>
</tr>
<tr>
<td>COLREGs</td>
<td>International Regulations for Preventing Collisions at Sea, 1972</td>
</tr>
<tr>
<td>ECDIS</td>
<td>Electronic Chart Display and Information System</td>
</tr>
<tr>
<td>ETA</td>
<td>Estimated time of arrival</td>
</tr>
<tr>
<td>GPS</td>
<td>Global Positioning System</td>
</tr>
<tr>
<td>GT</td>
<td>Gross tonnage</td>
</tr>
<tr>
<td>IALA</td>
<td>International Association of Marine Aids to Navigation and Lighthouse Authorities</td>
</tr>
<tr>
<td>IMO</td>
<td>International Maritime Organization</td>
</tr>
<tr>
<td>kW</td>
<td>Kilowatt</td>
</tr>
<tr>
<td>m</td>
<td>Metre</td>
</tr>
<tr>
<td>MV</td>
<td>Motor vessel</td>
</tr>
<tr>
<td>MSIU</td>
<td>Marine Safety Investigation Unit</td>
</tr>
<tr>
<td>NM</td>
<td>Nautical miles</td>
</tr>
<tr>
<td>OOW</td>
<td>Officer of the Watch</td>
</tr>
<tr>
<td>PRS</td>
<td>Polski Rejestr Statkow</td>
</tr>
<tr>
<td>RINA</td>
<td>Registro Italiano Navale</td>
</tr>
<tr>
<td>Ro-Ro</td>
<td>Roll on-Roll off</td>
</tr>
<tr>
<td>RPM</td>
<td>Revolutions per Minute</td>
</tr>
<tr>
<td>SMCP</td>
<td>Standard Marine Communication Phrases</td>
</tr>
<tr>
<td>SOLAS</td>
<td>International Convention on the Safety of Life at Sea, 1974 as amended</td>
</tr>
<tr>
<td>SOPs</td>
<td>Standard Operating Procedures</td>
</tr>
<tr>
<td>STCW</td>
<td>International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>sVDR</td>
<td>Simplified Voyage Data Recorder</td>
</tr>
<tr>
<td>TOS</td>
<td>Traffic organisation service</td>
</tr>
<tr>
<td>TSS</td>
<td>Traffic Separation Scheme</td>
</tr>
<tr>
<td>TSVTS</td>
<td>Turkish Straits Vessel Traffic Service</td>
</tr>
<tr>
<td>UTC</td>
<td>Universal Time Coordinated</td>
</tr>
<tr>
<td>VDR</td>
<td>Voyage Data Recorder</td>
</tr>
<tr>
<td>VHF</td>
<td>Very high frequency</td>
</tr>
<tr>
<td>VTS</td>
<td>Vessel Traffic Service</td>
</tr>
<tr>
<td>VTSO</td>
<td>Vessel Traffic Officer</td>
</tr>
</tbody>
</table>
SUMMARY

On 27 November 2016, the Maltese registered cargo vessel *Sider Capri* and the Italian flagged ro-ro vessel *Grande Anversa* collided in the Çanakkale Strait’s Traffic Separation Scheme. At the time, *Sider Capri* was on a passage from Constanta, Romania to Larnaca, Cyprus. The chief mate was alone on the bridge of *Sider Capri* and was also at the helm. *Grande Anversa* was on an Easterly course in the in-bound traffic lane, bound for Autoport, Turkey. The master had the con, the second mate was officer of the watch and an able seaman was at the helm.

Both *Sider Capri* and *Grande Anversa* sustained structural damages above the waterline but no injuries and no pollution were reported. The safety investigation found that the cause of the accident was a close quarter situation which developed to a point that a collision became inevitable.

The Marine Safety Investigation Unit (MSIU) has made recommendations addressed to the managers of *Sider Capri* and *Grande Anversa* intended to address navigational watchkeeping. Recommendations were also made to the Turkish Straits Vessel Traffic Service, aimed to address navigational safety in the Strait of Çanakkale.

The MSIU acknowledges the assistance and cooperation during the course of this safety investigation from the Ministry of Transport, Maritime Affairs and Communications, Turkey and the Marine Casualty Investigation Central Board, Italy.
## 1 FACTUAL INFORMATION

### 1.1 Vessel, Voyage and Marine Casualty Particulars

<table>
<thead>
<tr>
<th>Name</th>
<th>Sider Capri</th>
<th>Grande Anversa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flag</td>
<td>Malta</td>
<td>Italy</td>
</tr>
<tr>
<td>Classification Society</td>
<td>PRS</td>
<td>RINA</td>
</tr>
<tr>
<td>IMO Number</td>
<td>9143403</td>
<td>9287417</td>
</tr>
<tr>
<td>Type</td>
<td>General Cargo</td>
<td>Vehicle Carrier</td>
</tr>
<tr>
<td>Registered Owner</td>
<td>Amaga Limited</td>
<td>Grimaldi Euromed Spa</td>
</tr>
<tr>
<td>Managers</td>
<td>Polskie Linie Oceaniczne SA</td>
<td>Grimaldi Group Spa</td>
</tr>
<tr>
<td>Construction</td>
<td>Steel (Double bottom)</td>
<td>Steel (Double bottom)</td>
</tr>
<tr>
<td>Length overall</td>
<td>99.97 m</td>
<td>176.60 m</td>
</tr>
<tr>
<td>Registered Length</td>
<td>92.19 m</td>
<td>167.53 m</td>
</tr>
<tr>
<td>Gross Tonnage</td>
<td>3415</td>
<td>38651</td>
</tr>
<tr>
<td>Minimum Safe Manning</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Authorised Cargo</td>
<td>General cargo</td>
<td>Road vehicles</td>
</tr>
<tr>
<td>Port of Departure</td>
<td>Constanta, Romania</td>
<td>Valencia, Spain</td>
</tr>
<tr>
<td>Port of Arrival</td>
<td>Larnaca, Cyprus</td>
<td>Autoport, Turkey</td>
</tr>
<tr>
<td>Type of Voyage</td>
<td>International</td>
<td>International</td>
</tr>
<tr>
<td>Cargo Information</td>
<td>Barley in bulk</td>
<td>Vehicles</td>
</tr>
<tr>
<td>Manning</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td>Date and Time</td>
<td>27 November 2016 at 1906 (LT)</td>
<td></td>
</tr>
<tr>
<td>Type of Marine Casualty</td>
<td>Serious Marine Casualty</td>
<td>Serious Marine Casualty</td>
</tr>
<tr>
<td>Location of Occurrence</td>
<td>40° 01.45' N 026° 11.37' E</td>
<td></td>
</tr>
<tr>
<td>Place on Board</td>
<td>Forecastle deck</td>
<td>Overside</td>
</tr>
<tr>
<td>Injuries/Fatalities</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Damage/Environmental Impact</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Ship Operation</td>
<td>On passage</td>
<td>On passage</td>
</tr>
<tr>
<td>Voyage Segment</td>
<td>Transit</td>
<td>Transit</td>
</tr>
<tr>
<td>External &amp; Internal Environment</td>
<td>The weather was clear with visibility up to six nautical miles. There was a light to gentle breeze from the Southwest. The sea was calm with no swell. The air temperature was 08 °C.</td>
<td></td>
</tr>
<tr>
<td>Persons on Board</td>
<td>11</td>
<td>25</td>
</tr>
</tbody>
</table>
1.2 Description of Vessels

1.2.1 MV Sider Capri

The Maltese registered *Sider Capri* (Figure 1), is a general cargo vessel of 3,415 gt, owned by Amaga Limited and operated by Polskie Linie Oceaniczne, SA. The vessel was built by Luerssen-Kroegen Werft GmbH& Co KG, Germany in 1997 and is classed by Polski Rejestr Statkow (PRS.) The vessel has a length overall of 99.51 m. Propulsive power is provided by a 12-cylinder MAN B&W Diesel AG – Augsburg 9L48/60, four-stroke, medium speed, diesel engine, producing 2,940 kW, geared to a shaft and driving a single controllable pitch propeller at 231 rpm. This gives a service speed of about 14.5 knots.

![Figure 1: MV Sider Capri](image)

The navigational bridge is fitted with, *inter alia*, S-band and X-band radars, an ARPA, a GPS and an AIS. The crew compliment was made up of Polish nationals and complied with the Minimum Safe Manning Certificate, issued by the flag State Administration. The navigation watches were kept by the master, chief mate and second mate as shown hereunder:

<table>
<thead>
<tr>
<th>Watch</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>second mate</td>
<td>0000 to 0400</td>
</tr>
<tr>
<td></td>
<td>1200 to 1600</td>
</tr>
<tr>
<td>chief mate</td>
<td>0400 to 0800</td>
</tr>
<tr>
<td></td>
<td>1600 to 2000</td>
</tr>
<tr>
<td>master</td>
<td>0800 to 1200</td>
</tr>
<tr>
<td></td>
<td>2000 to 2400</td>
</tr>
</tbody>
</table>

The master was 57 years old and had over six years of command experience. He reported that since joining *Sider Capri* on 31 August 2016, three voyages through the Turkish Straits had been completed without the assistance of a pilot on board.
The chief mate was 63 years old and had been at sea for over 30 years. He had obtained his Class 1 certificate in 2006 and joined Polskie Linie in 2015. He had signed on *Sider Capri* on 05 August 2016.

The duty able seaman (AB) on the bridge was an experienced, 66 year old seaman.

The working language on board was Polish.

### 1.2.2 MV Grande Anversa

The 38,651 gt *Grande Anversa* (Figure 2) is registered in Italy as a vehicle carrier and is owned and managed by Grimaldi Euromed SPA. The vessel was built by Uljanik Brodogradiliste Dd., Croatia in 2004. *Grande Anversa* has a length overall of 176.60 m and a displacement of 12,420 tonnes. She has enough cargo spaces to carry approximately 4,600 vehicles.

Propulsive power is provided by a 7-cylinder MAN B&W 7S50 MC-C, two-stroke, slow speed, single acting diesel engine, producing 11,059 kW, driving a controllable pitch propeller at 127 rpm, and reaching a service speed of about 20 knots.

![Figure 2: MV Grande Anversa](image)
*Grande Anversa* was manned in accordance with the Minimum Safe Manning Certificate issued by the Italian flag State Administration. At the time of the accident, the second mate was the navigational officer of the watch (OOW), the master had the con, and an AB was at the helm. The master and the second mate were Italian nationals. The AB was from India and qualified to Regulation II/5 of the STCW Convention. Proficiency of English language on board was good.

### 1.3 Çanakkale Vessel Traffic Service

Navigation in the Strait of Çanakkale is regulated by the Maritime Traffic Regulations for the Turkish Straits\(^1\) and monitored by Çanakkale Vessel Traffic Service (VTS). The Strait of Çanakkale is about 38 nautical miles (nm) long and connects the Sea of Marmara and Aegean Sea. The passage is straightforward except for a sharp bend near the City of Çanakkale, where the Strait reaches a width of about 1,300 m.

Çanakkale VTS\(^2\) is part of the Turkish Straits Vessel Traffic Service (TSVTS). The TSVTS provides information, navigational assistance and traffic organisation services (TOS)\(^3\). The Service is operated in accordance with the Turkish Maritime Traffic Regulations, IMO Resolutions A.827 (19) and A.857 (20).

Vessels transiting the Turkish Straits participate in the vessel reporting system. Speed in the Straits in excess of 10 knots is subject to VTS approval. The TSVTS falls within the portfolio of the Turkish Ministry of Transport, Maritime and Communications.

#### 1.3.1 VTS communication format

VTS operators (VTSO) are trained to IALA V-103\(^4\) standard. The language for communicating with vessels is English and Standard Marine Communication Phrases (SMCP) are used. In TSVTS, the Turkish language may be used with Turkish vessels.

---

\(^1\) Turkish Straits are defined as comprising the Strait of Istanbul (Bosphorus), the Strait of Çanakkale and the Sea of Marmara.

\(^2\) VTS is defined as a service implemented by a Competent Authority, designed to improve the safety and efficiency of vessel traffic and to protect the environment.

\(^3\) TOS, as defined by IMO Resolution A.857(20), is a service to prevent the development of dangerous maritime traffic situations and to provide for the safe and efficient movement of vessel traffic within the VTS area.

\(^4\) IALA V-103 is the recognised international standard for training and certification for VTS personnel.
and with pilots engaged on board vessels. All communication is conducted through the VTS Centre and communication between vessels is generally eschewed. TSVTS’ SOPs on VHF communication and VTS operations require that message markers\(^5\) (Table 1) are used for communications with the TSVTS.

Table 1: Message markers

<table>
<thead>
<tr>
<th>When communicating in Turkish</th>
<th>When communicating in English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilgi</td>
<td>Information</td>
</tr>
<tr>
<td>Tavsiye</td>
<td>Advice</td>
</tr>
<tr>
<td>Uyari</td>
<td>Warning</td>
</tr>
<tr>
<td>Talimat</td>
<td>Instruction</td>
</tr>
<tr>
<td>Soru</td>
<td>Question</td>
</tr>
<tr>
<td>Cevap</td>
<td>Answer</td>
</tr>
<tr>
<td>Talep</td>
<td>Request</td>
</tr>
<tr>
<td>Niyet</td>
<td>Intention</td>
</tr>
</tbody>
</table>

1.3.2 Çanakkale Strait VTS area

VTS in the Strait of Çanakkale is split in three sectors - Gelibolu, Nazra and Kumkale (Figure 3) and each sector is controlled by an operator. Vessels in Kumkale Sector, report to Sector Kumkale on VHF channel 13.

Figure 3: Çanakkale VTS area and sectors

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\(^5\) Message markers are used to increase the probability of the message being properly understood or when SMCP will not fit the intended meaning.
1.4 Traffic Separation Scheme

A Traffic Separation Scheme (TSS), adopted by the International Maritime Organization (IMO), was introduced throughout the Turkish Straits in 1995. The TSS provides traffic lanes\(^6\), separated by a traffic line or zone to prevent collisions. Directional arrows marked on navigational charts indicate the general direction of traffic flow and serve as reminders for mariners to set their courses along those arrows. The International Regulations for Preventing Collisions at Sea, 1972, as amended (COLREGs) regulate the conduct of vessels in and near TSS. A schema of TSS controlled by Sector Kumkale is shown in Figure 4.

![Traffic Separation Scheme in Sector Kumkale](image)

**Figure 4: Traffic Separation Scheme in Sector Kumkale**

1.5 Pilotage Service

Pilotage within the Turkish Straits is only compulsory for vessels bound for or leaving Turkish ports. However, for safe navigation and protection of the environment, the Turkish Authorities and IMO Resolution A.827 (19) recommend pilotage for all vessels. Details of pilotage service, and pilot embarkation and disembarkation areas are defined in the Maritime Traffic Regulations.

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\(^6\) Vessels proceed in opposite or nearly opposite directions separated by a traffic line or a zone.
1.6 Environmental Conditions

Environmental conditions at the time of the collision were clear with visibility up to 6 nm. There was a light to a gentle breeze from the Southwest. The sea was calm and there was no swell. The air temperature was 08 °C.

1.7 Narrative

1.7.1 Sider Capri

_Sider Capri_, laden with a cargo of malt, was on her way from Constanta, Romania to Larnaca, Cyprus. On 27 November 2016, she advanced into Çanakkale Strait’s outbound traffic lane from the Sea of Marmara. At 1840, the master ordered a course of 239° and then left the bridge to rest, leaving the chief mate on watch and an AB at the helm. There was no pilot on board.

Shortly afterwards, the AB left the bridge and the chief mate took over the helm. The speed at the time was 11.8 knots. At about 1859, _Sider Capri_ reached the marked way point on the chart. Her next charted course was 262°. Evidence indicated that the chief mate overlooked the course alteration position, and the vessel headed towards the separation zone.

At 1900, the VTSO called _Sider Capri_ on the VHF radio and directed her to alter course to starboard and keep within the traffic lane. The call was acknowledged and initially, the chief mate started turning the vessel to the starboard side.

1.7.2 Grande Anversa

_Grande Anversa_ sailed from Valencia, Spain bound to Autoport, Turkey, carrying vehicles on board. On 27 November 2016, she was approaching Çanakkale Strait from the Aegean Sea. Her speed was 17 knots, with an ETA to Kumkale Lighthouse at 1900. The second mate was the OOW, assisted by an AB.

---

7 Although documents from _Sider Capri_ made no reference to adverse weather conditions, during the Consultation Period, the Accident Investigation Board of Turkey submitted that there was a two metre Southwesterly swell as a result of earlier Southwesterly winds. Documents from _Grande Anversa_ made no reference to weather conditions in the Aegean Sea.

8 Unless otherwise stated, all times are local time (UTC +3).
At 1700, the OOW gave a two hour notice to Çanakkale VTS. At 1750, he contacted the pilot station on VHF channel 71, following which, he tested the navigational equipment and rang one hour notice to the engine-room. The master took the con at 1835, with an AB assigned at the helm. *Grande Anversa* was steering East Northeast, in the inbound traffic lane.

At about 1840, the OOW made visual contact with *Sider Capri*. He plotted her position on the radar and found her passing at a safe distance. At 1850, Çanakkale VTS called *Grande Anversa* on the VHF radio. The VTSO advised that the outbound motor vessel *Act* was crossing *Grande Anversa*’s bow from port to starboard. The VTSO directed *Grande Anversa* to keep *Act* on the starboard side.

At the time, *Grande Anversa* was steering 076° and *Act* was on a Southwesterly course, in the outbound lane. At 1855, she crossed *Grande Anversa*’s course (Figure 5) and shortly afterwards passed green to green in the inbound traffic lane of the TSS.

![Figure 5: Radar image showing relative position of Act and Sider Capri at 1855](image)

At about the same time, the master observed *Sider Capri*, now at a distance of 4 nm, fine on the port bow and displaying her green navigational light. He reported that *Sider Capri* was on a Southwesterly heading and intended to cross *Grande Anversa*’s course (Figure 5). At 1900, the master reduced speed and adjusted the course to 074°,
in preparation to embark the pilot. He instructed the second mate to call *Sider Capri* on the VHF radio to pass green to green.

1.7.3 Events leading to the collision

The VHF call to pass green to green alerted the chief mate on *Sider Capri*. He immediately responded and altered course from a heading of 247° to 230° (Figure 6).

Figure 6: Relative position and course of *Grande Anversa* and *Sider Capri* at 1903/43s

Source: TSVTS

Çanakkale VTS, however, intervened and directed *Sider Capri* to change course to starboard and pass port to port with the inbound ship. The OOW answered, “already done, already done.” The VTSO also instructed *Grande Anversa* to pass port to port and enquired whether *Sider Capri* was altering her course. When *Grande Anversa* replied in the negative, the VTSO instructed *Grande Anversa* to reduce her speed and then called *Sider Capri*. The OOW on the latter vessel replied that he changed course to the port side to clear the vessel. The VTSO informed *Grande Anversa* of *Sider Capri’s* intention to pass green to green and advised the master to take all
precautions. The master’s replied, “yes, we already have done green to green,” (Figure 7).

The master then observed *Sider Capri* turning to starboard (Figure 8) and put the helm hard to port, to swerve away from her. When the collision seemed imminent, he increased the speed and ordered a hard over to starboard, to open her stern and lessen the impact and damage. Meanwhile, the AB on *Sider Capri* returned on the bridge. The chief mate transferred the helm to the AB but observed *Grande Anversa* too close ahead. He ordered the engine full astern and the helm to starboard.

At 1906/50s, the bow of *Sider Capri* made contact with *Grande Aversa*’s starboard quarter, above the waterline (Figure 9). The collision occurred in the TSS separation zone, South of Seddul Bahir, in position 40° 01.45’ N 026° 11.37’ E.

**Figure 7: Relative position and course of Grande Anversa and Sider Capri at 1905/17s**

*Source: TSVTS*
Figure 8: VTS traffic image at 1906/15s showing *Sider Capri* altering course to starboard

Figure 9: Damage to the side shell plating on *Grande Anversa*
### 1.8 VHF Radio Communication

A transcript of VHF radio communication recorded on channel 13 is shown in Table 2.

#### Table 2: VHF communication between Çanakkale VTS, the pilot, Grande Anversa and Sider Capri

<table>
<thead>
<tr>
<th>Local Time</th>
<th>Duration of Communication</th>
<th>Calling Station</th>
<th>Audio Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 51 25</td>
<td>0m 30s</td>
<td>Çanakkale VTS</td>
<td>Grande Anversa, Grande Anversa, Sector Kumkale over.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grande Anversa</td>
<td>Yes, good evening. This is Grande Anversa.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Çanakkale VTS</td>
<td>Grande Anversa. Good evening, Captain. For your information, there is an outbound ship, outbound ship, Act, crossing your bow from port to starboard can you pass starboard to starboard, over?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grande Anversa</td>
<td>OK, starboard to starboard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Çanakkale VTS</td>
<td>Yes, Captain. Keep the outbound ship on your starboard side, please.</td>
</tr>
<tr>
<td>18 59 29</td>
<td>0m 10s</td>
<td>Pilot</td>
<td>Grande Anversa, 6 to 7 knots over.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grande Anversa</td>
<td>Copy 6 to 7 knots.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pilot</td>
<td>Yes…pilot on the way.</td>
</tr>
<tr>
<td>19 00 09</td>
<td>0m 52s</td>
<td>Çanakkale VTS</td>
<td>Sider Capri, Sider Capri, Sector Kumkale.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sider Capri</td>
<td>Sider Capri replying.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Çanakkale VTS</td>
<td>Captain, please starboard as much as possible.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sider Capri</td>
<td>Could you repeat?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Çanakkale VTS</td>
<td>Yes, Captain. I see your position middle of channel. Please keep starboard side. Over.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sider Capri</td>
<td>That we…I have right sail lessen our speed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Çanakkale VTS</td>
<td>Negative, Negative. Your position, your position seems middle of the channel, on the middle of channel. Please change course to starboard side so as to proceed starboard lane, appropriate traffic lane, please. Over.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sider Capri</td>
<td>Copy this, thank you.</td>
</tr>
<tr>
<td>Time</td>
<td>Duration</td>
<td>Ship/Location</td>
<td>Message</td>
</tr>
<tr>
<td>--------</td>
<td>----------</td>
<td>--------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>19 01 14</td>
<td>1m 05s</td>
<td><em>Grande Anversa</em></td>
<td><em>Sider Capri, motor vessel Grande Anversa.</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Sider Capri</em></td>
<td><em>Grande Anversa, Sider Capri.</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Grande Anversa</em></td>
<td>Yes, good afternoon green to green, it’s ok?</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Sider Capri</em></td>
<td>Ya. Of course it’s ok.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Grande Anversa</em></td>
<td>Thank you to you green to green.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Çanakkale VTS</td>
<td><em>Sider Capri. Capri, what’s the problem why green to green? Over</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sider Capri</td>
<td>One time more please.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Çanakkale VTS</td>
<td>Captain negative port to port. Please change course to starboard side. Over</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sider Capri</td>
<td>Starboard side ok.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Çanakkale VTS</td>
<td><em>Grande Anversa, Grande Anversa, Sector Kumkale.</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grande Anversa</td>
<td>Yes, this is Grande Anversa.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Çanakkale VTS</td>
<td>Captain, please start port to port, red to red. Over.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grande Anversa</td>
<td>Yes, copy on that, port to port with Sider Capri.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Çanakkale VTS</td>
<td><em>Sider Capri, please change course to starboard side and pass port to port with in-bound ship.</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sider Capri</td>
<td>Already done, already done.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Çanakkale VTS</td>
<td>Thank you, thank you, stand by.</td>
</tr>
<tr>
<td>Time</td>
<td>Duration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>----------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 02 44</td>
<td>2m 03s</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Çanakkale VTS  
Hello, this is Çanakkale VTS. How are you going? Over.

Grande Anversa  
Yes, this is Grande Anversa. How are you going? Over.

Çanakkale VTS  
Yes, I just like to ask about the situation. How the situation going? Over.

Grande Anversa  
Sorry, say again I read you very broken. Over.

Çanakkale VTS  
Yes, I like to know if the other ship, outbound ship changing course to starboard side or not. Over.

Grande Anversa  
Yes, no, no, nothing is changing. It keeps its course. Over.

Çanakkale VTS  
So I don’t know, Captain. Please reduce speed to minimum, no forget please. Over.

Sider Capri  
Yes, we already changed 10° to the port side it clear situation. Over.

Çanakkale VTS  
Yes you want to, captain, what’s your intention please repeat your intention. Over.

Sider Capri  
We already changed our course to the port side; it clear situation with other vessel. Over.

Çanakkale VTS  
So you want to pass green to green, is that correct? Over.

Sider Capri  
Yes, green to green. Over.

Çanakkale VTS  

Sider Capri  
Yes.

Çanakkale VTS  

Grande Anversa  
Yes, this is Grande Anversa. Over.

Çanakkale VTS  
Captain, the outbound ship insists on green to green. Please take all precautions. Over.

Grande Anversa  
Yes we already have done green to green.
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Vehicle 1</th>
<th>Vehicle 2</th>
<th>Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 07 27</td>
<td>0m 44s</td>
<td><em>Grande Anversa</em></td>
<td><em>Sider Capri</em></td>
<td><em>Sider Capri, Sider Capri, this is motor vessel Grande Anversa, Grande Anversa. Motor vessel Sider Capri, this is Grande Anversa, Grande Anversa. Sider Capri, channel one six, please. Sider Capri, motor vessel Sider Capri, this is Grande Anversa, channel one six.</em></td>
</tr>
<tr>
<td>19 08 12</td>
<td>2m 27s</td>
<td><em>Çanakkale VTS</em></td>
<td><em>Grande Anversa</em></td>
<td><em>Çanakkale VTS</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Yes, yes, sector station are you clear of the other vessel.</em></td>
<td><em>Sir, this vessel is in collision with us. This vessel is in collision with us aft part starboard side. This vessel no reply, not replied. They wrong completely manoeuvring no respect the order. No respect the VHF channel one six the order. No respect the order.</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Collided on the starboard quarter at 1906…</em></td>
<td><em>Sector Kumkale, please this is Grande Anversa.</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>You reported that you had collided; you had collided on starboard quarter. Is that correct? Over.</em></td>
<td><em>Yes, collision with this vessel starboard quarter with Sider Capri. I also calling, I also calling. No respect the order. This vessel, we have recorded everything. They go to port, they go to starboard, they change course continue. No respect the order, no respect.</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Thank you Captain. Please stand by. Sider Capri, Sider Capri, Sector Kumkale.</em></td>
<td><em>Yes, Sider Capri replying. We are after collision. Yes I know about it. We are after collision. We start check what happened that.</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Yes Captain, please check the situation, check the situation, if have any assistance please any assistance. Over.</em></td>
<td><em>At the moment we start check what is going on and I think if nothing happened about the condition of the vessel.</em></td>
<td></td>
</tr>
</tbody>
</table>
1.9 Post-collision Events

*Sider Capri* sustained significant structural damages in way of the forecastle deck and bow section, including frames and stiffeners. The collision was reported to Çanakkale VTS, who ordered a pilot and tug to assist her. At 2000, *Sider Capri* dropped anchor at Karanlik Liman.

At 1915, the pilot embarked *Grande Anversa* in position 40° 01.378’ N 026° 12.192’ E and progressively changed course for the inbound lane for Karanlik Liman anchorage. *Grande Anversa*’s planned course and track South of Seddul Bahir is shown in Figure 10.

![ECDIS image of Grande Anversa’s planned course and track, South of Seddul Bahir](image)

The following damages were reported by *Grande Anversa*:

- Indentation in way of deck no. 5, between frames 50 and 51 and frames 39 and 43;
- Indentation in way of deck no. 6, between frames 50 and 51 and frames 39 and 43; and
- Hull fracture above the waterline, between frames 51 and 53.
2 ANALYSIS

2.1 Purpose

The purpose of a marine safety investigation is to determine the circumstances and safety factors of the accident as a basis for making recommendations, to prevent further marine casualties or incidents from occurring in the future.

2.2 Reconstruction of Events

Key navigational information extracted from the voyage data recorder (VDR) of Grande Anversa and Sider Capri’s simplified voyage data recorder (SVDR), is tabulated in Table 3. The times are in UTC.

Table 3: Key navigational information

<table>
<thead>
<tr>
<th>Time UTC</th>
<th>Grande Anversa (VDR)</th>
<th>Sider Capri (SVDR)</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heading</td>
<td>Speed</td>
<td>Heading</td>
</tr>
<tr>
<td>15 40 00</td>
<td>081</td>
<td>17.3</td>
<td>238</td>
</tr>
<tr>
<td>15 50 00</td>
<td>077</td>
<td>17.2</td>
<td>240</td>
</tr>
<tr>
<td>15 55 00</td>
<td>076</td>
<td>14.0</td>
<td>240</td>
</tr>
<tr>
<td>15 59 00</td>
<td>075</td>
<td>13.0</td>
<td>242</td>
</tr>
<tr>
<td>16 00 00</td>
<td>075</td>
<td>12.4</td>
<td>240</td>
</tr>
<tr>
<td>16 01 00</td>
<td>074</td>
<td>11.4</td>
<td>239</td>
</tr>
<tr>
<td>16 02 00</td>
<td>074</td>
<td>10.8</td>
<td>246</td>
</tr>
<tr>
<td>16 02 30</td>
<td>074</td>
<td>10.7</td>
<td>231</td>
</tr>
<tr>
<td>16 03 00</td>
<td>078</td>
<td>10.4</td>
<td>231</td>
</tr>
</tbody>
</table>
2.3 International Regulations for Preventing Collisions at Sea, 1972

The rules for the prevention of collisions at sea are contained in the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs). The following rules have particular relevance to this safety investigation:

- Rule 5: a proper lookout must be kept at all times. A proper lookout means the ability of the watchkeeper to fully appraise the developing situation. It includes lookout by sight, hearing and the proper use of navigational aids;

- Rule 7: all available means appropriate to the prevailing circumstances and conditions should be used to determine the risk of collision, and assumptions shall not be made on scanty information. If there is any doubt, a collision risk shall be deemed to exist;

- Rule 8: reducing speed or taking all way off the vessel to allow more time to assess the situation or, if necessary, to avoid collision;

- Vessels navigating in the IMO approved TSS must comply with Rule 10.

Rule 10 requires, inter alia, that vessels following the lane must proceed in the general direction of traffic flow and if they are obliged to cross TSS, they must do so on a heading as nearly as practicable at right angles to that direction.

Vessels should keep clear of the traffic separation line or separation zone. They should join or leave a traffic lane at its termination or from either side of
a lane, provided they do so at as small angles as possible to the general
direction of traffic flow. This rule does not relieve any vessel of her obligation
under any other rule;

2.4 VHF Radio Communication in Collision Avoidance

VHF radio is commonly used at sea to clarify the vessel’s identity or intentions but its
use as a collision avoidance aid is fraught with risks, even because valuable time may
be wasted, trying to establish communication. Even where contact has been made,
uncertainties may either arise over the meaning of the message, or the action
suggested may not comply with the COLREGs.

Ambiguous, ill-defined, imprecise or incomplete sentences are difficult to
comprehend and may delay actions when vessels are closing fast and time is crucial.
Thus, VHF radio for collision avoidance is generally discouraged where the
applications of COLREGs ensure a safe outcome.

2.5 Assessment of the Events Leading to the Collision

2.5.1 Sider Capri

Section A – VIII/2, Part 4-1 / 26 and 27 of the STCW Convention requires that the
OOW shall have full knowledge of the location and operation of all safety and
navigational equipment on board the ship. The OOW is also required not to be
assigned or undertake any duties, which would interfere with the safe navigation.

It has been established that Sider Capri was navigating in the Turkish Strait without a
pilot. Moreover, about 10 minutes prior to the collision, the AB left the bridge. It
was evident that neither a replacement was called, nor was the master informed.
Moreover, the autopilot had not been engaged. To this effect, there was no additional
look-out on the bridge and the chief mate was at the helm. That means that he was

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Chamber of Shipping (ICS) states: “VHF radio should not be used for collision avoidance purposes.
Valuable time can be wasted attempting to make contact since positive identification may be
difficult and, once contact has been made, misunderstandings may arise.” Further guidance on the
risks of using VHF radio for collision avoidance is given in the UK’s Marine Guidance Note
MGN 324 (M+F).

10 Principles to be observed in keeping a navigational watch – performing the navigational watch.
confined in one location and unable to view the radar, AIS or plot positions on the chart. Moreover, the helm console position and lay out of the navigational equipment restricted his view of the horizon.

The safety investigation came to the conclusion that as a result of these conditions, his awareness of the situation became inaccurate and he neither noticed Grande Anversa visually nor by radar. Consequently, he lost both position and direction in the TSS.

### 2.5.2 Grande Anversa

A passage plan was prepared prior to departure Valencia but with no reference to the Turkish Straits pilot. The courses, verified by the master, were drawn on the chart and displayed on ECDIS. During the voyage, a decision was made to engage a pilot. About 20 nm before Çanakkale Strait, the pilot station contacted Grande Anversa on VHF channel 71 and provided the necessary information on the pilot boarding arrangement. The precise boarding position communicated by the pilot was not logged and the passage plan was not amended. Evidence presented to the safety investigation, however, showed that the vessel passed the pilot embarkation area marked on the chart (40° 00.45′ N  026° 08.15′ E) and moved into Çanakkale Strait without the aid of a pilot.

Analysis of the evidence showed that at 1900, Grande Anversa was nearly South of Seddul Bahir, in the inbound traffic lane. She was steady on a course of 074°, and converging on the TSS separation zone. The speed was 12 knots. The master had the con and he was approaching the pilot boat. At about the same time, Sider Capri was 2 nm from Grande Anversa, on course 239° in the outbound lane. Her speed was 11.5 knots. She was also converging on the separation zone and apparently on a close quarter situation with Grande Anversa.

At 1900/09s, Canakkale VTS instructed Sider Capri to turn to starboard within the outbound lane. Grande Anversa was not aware of these instructions and the course changes made by Sider Capri in response to the VTS were neither readily displayed on Grande Anversa’s radar nor the AIS. The master of Grande Anversa, who on the advice of the VTSO had earlier passed green to green with the outbound vessel Act, assumed that Sider Capri also wanted to pass green to green, i.e., cross the separation zone and Grande Anversa’s course and pass on her starboard side. The master, thus,
neither signified doubt (by sounding five short blasts) nor acted as the stand-on vessel. Instead, he called *Sider Capri* to ensure a ‘green to green’ manoeuvre, similar to the one he had earlier accomplished with *Act*. However, the VTSO intervention and subsequent brisk and hurried communication on the VHF radio exacerbated the agreed passing arrangement, even because the vessels involved had a different perspective and resolution to the problem.

2.5.3 **Pilot embarkation position**

A pilot on board not only increases the bridge complement but also helps in the assessment and understanding of the external environment. The pilot also facilitate communication with the VTS. Though voluntary for non-stopover passage, pilotage is recommended by the Turkish Authorities for safe navigation and protection of the environment. In the case of *Grande Anversa*, however, pilotage was compulsory since her next port of call was Autoport.

Pilot embarkation and disembarkation areas are defined in the ‘Maritime Traffic Regulations for the Turkish Straits’. The boarding areas for vessels approaching Çanakkale Strait from the Aegean Sea are:

*The pilot boarding area is in position at Lat. 40° 00, 45’ N, Long. 026° 08, 154’ E. Due to weather conditions, pilot boarding may take place in between this position and the latitude passing through Kumkale light, as near to the outer limit of the Northbound traffic lane, which lies on starboard side of the vessel as is safe and practicable.*

Furthermore, the regulations state:

*For the navigational safety or due to the traffic density, the Administration may temporarily change the pilot boarding / disembarking areas. New positions shall be reported to the vessels and the concerned parties.*

Documents submitted to the MSIU show that the boarding area had not been (temporarily) changed by the Authorities. The fact that *Grande Anversa* sailed past the authorised boarding area towards the boarding position communicated by the pilot station meant that the master could not avail himself of the pilot’s experience and knowledge and it encumbered the VTSO to resolve the pressing problem developing in the area.
2.5.4 Çanakkale VTS

From the evidence submitted, the safety investigation was unable to establish as to why *Act* crossed the TSS in contravention to Rule 10 (C) of the COLREGs\(^\text{11}\). The fact that *Act’s* approach remained unquestioned and allowed by VTS, may have influenced the master of *Grande Anversa* that *Sider Capri* planned to take the same route as *Act*. Then, an overload of information as a result of the master’s preoccupation with the con towards the approaching pilot boat, radio noise and sporadic conversations on the bridge may have not alerted the master or the second mate to the VTSO communication (without message markers) to *Sider Capri* with respect to the starboard manoeuvre within the outbound lane.

The Turkish Authorities explained that SMCP and message markers are used by VTS as far as practicable. It was further explained that limited time and communications with two or more vessels in an emergency situation is much more complex than routine communication to enable the application of SMCP and message markers. However, the safety investigation is of the view that messages transmitted over VHF radio must be meaningful, have clarity and be procedurally correct, since action is contingent upon correct interpretation to remedy a demanding situation. IMO Resolution A.918 (22) recommends SMCP. These phrases were specifically developed to overcome language difficulties and prevent misunderstandings; and a message which is prefixed by a message marker\(^\text{12}\) is even less likely to cause misinterpretation.

Although the bridge team members on *Grande Anversa* seemed to have no difficulty to understand English, *Sider Capri’s* chief mate was apparently uneasy with the spoken English and with the pace of events. He had complied with the VTSO instructions and then with *Grande Anversa’s* request to pass ‘green to green’. However, the questions “*what’s the problem?*, *why green to green*?” followed by other phrases “*port to port, red to red, change course to starboard,*” confounded the chief mate. While the VTSO intended to keep the vessels in their respective traffic lanes, it would appear that the phrases lacked clarity and in the prevailing dynamic

\(^{11}\) During the Consultation Period, the Accident Investigation Board of Turkey confirmed that *Act* was given permission from the VTS to proceed to Bozcaada Channel and that VTS had informed *Grande Anversa* of Act’s crossing the TSS.

\(^{12}\) Where IMO Standard Marine Communication Phrases do not fit the meaning desired, message markers may be used to increase the probability of the message being properly understood.
context, the chief mate was neither able to comprehend the developing situation, nor the intent of these messages.

2.5.5 The collision
A risk of collision was not anticipated by the master of *Grande Anversa* when he directed *Sider Capri* to pass on his starboard side. After *Sider Capri* had altered course as directed, *Grande Anversa*’s master stated that both vessels were green to green and passing clear of each other. This was also affirmed by the chief mate of *Sider Capri*. However, it is believed that the subsequent intervention by the VTSO to pass ‘red to red’, as both vessels approached at a relative speed of 20 knots, altered the dynamics of the situation. *Grande Anversa* responded and commenced a series of small course alterations to starboard.

The poorly constructed sentences and directions by VTS in variance with *Grande Anversa*’s request to pass ‘green to green’ may have confused the OOW on *Sider Capri* and raised doubt as to who had clear authority for directing action. The OOW on *Sider Capri* did not react instantly; but possibly on reflection, deemed that Çanakkale VTS had the authority and was better placed to resolve the situation and altered course to starboard to pass ‘red to red’ with *Grande Anversa*.

2.6 Fatigue, Drugs and Alcohol
The hours of rest and work of the bridge team on *Grande Anversa* and *Sider Capri* were in accordance with the Maritime Labour and STCW Conventions’ requirements.

The MSIU was informed that after the accident, no drug or alcohol tests were carried out. The master of *Sider Capri*, however, reported that the OOW was not under the influence of alcohol or drug. With respect to *Grande Anversa*, the safety investigation did not identify any behaviour or actions which would suggest the influence of drug or alcohol.

Fatigue, drugs and alcohol were therefore not considered to be contributing factors to this accident.
THE FOLLOWING CONCLUSIONS, SAFETY ACTIONS AND RECOMMENDATIONS SHALL IN NO CASE CREATE A PRESUMPTION OF BLAME OR LIABILITY. NEITHER ARE THEY BINDING NOR LISTED IN ANY ORDER OF PRIORITY.
3 CONCLUSIONS

Findings and safety factors are not listed in any order of priority.

3.1 Immediate Safety Factor

.1 A close quarter situation developed and the collision between the two vessels became inevitable.

3.2 Latent Conditions and other Safety Factors

.1 Ten minutes before the collision, the only look-out on the bridge of *Sider Capri* was the OOW, who was also serving as the helmsman;

.2 The OOW was confined at the helm and unable to observe and interpret data from the radar, AIS, plot position and the chart and act on it;

.3 The helm console position and lay out of the navigational equipment restricted his view of the horizon;

.4 The OOW’s awareness of the situation was inaccurate and he neither noticed *Grande Anversa* visually nor by radar. Consequently, he lost both position and direction in the TSS;

.5 Courses taken by the master of *Grande Anversa* to embark the pilot showed substantial deviations from the authorised embarkation position;

.6 The starboard manoeuvre by *Sider Capri* in the outbound traffic lane was not clear to the master of *Grande Anversa* and a number of assumptions were made on the basis of his observations and understanding of the situation;

.7 The complexity being negotiated by the parties involved led to a situation where the risk of collision was not anticipated by the master on *Grande Anversa*, when he directed *Sider Capri* to pass on his starboard side;

.8 During the course of events, the VTS did not use message markers when communicating with either vessel.
3.3 Other Findings

.1 The boarding of the pilot was not in the area defined in the Maritime Traffic Regulations for the Turkish Straits;

.2 The fact that Act’s approach to cross the TSS was allowed by VTSo, may have influenced the master of Grande Anversa that Sider Capri planned to take the same route.
4 RECOMMENDATIONS

In view of the conclusions reached and taking into consideration the safety actions taken during the course of the safety investigation,

**Polskie Linie Oceaniczne SA is recommended to:**

**25/2017_R1**  Emphasis the importance of bridge resources management, taking into account the vessel’s trading pattern, navigational constraints and complexities;

**25/2017_R2**  Analyse situations encountered by crew members where the additional look-out leaves the bridge during hours of darkness in congested waters and narrow channels, and address the matter in the safety management system;

**Grimaldi Group Spa is recommended to:**

**25/2017_R3**  Disseminate this safety investigation report on board its fleet and ensure that it is discussed during on board safety management meetings;

**The Turkish Straits Vessel Traffic Service is recommended to:**

**25/2017_R4**  Consider the bridge teams’ unfamiliarity with navigational procedures in the Turkish Straits, ensure pilots embark at boarding positions defined in the Maritime Traffic Regulations for the Turkish Straits, or in areas temporarily changed by the Administration due to navigational safety or traffic density;

**25/2017_R5**  Ensure that VTSO communicate important messages with message markers and use SMCP, where practicable;

**25/2017_R6**  Advice vessels in breach of the TSS to comply with Rule 10 of COLREGs.